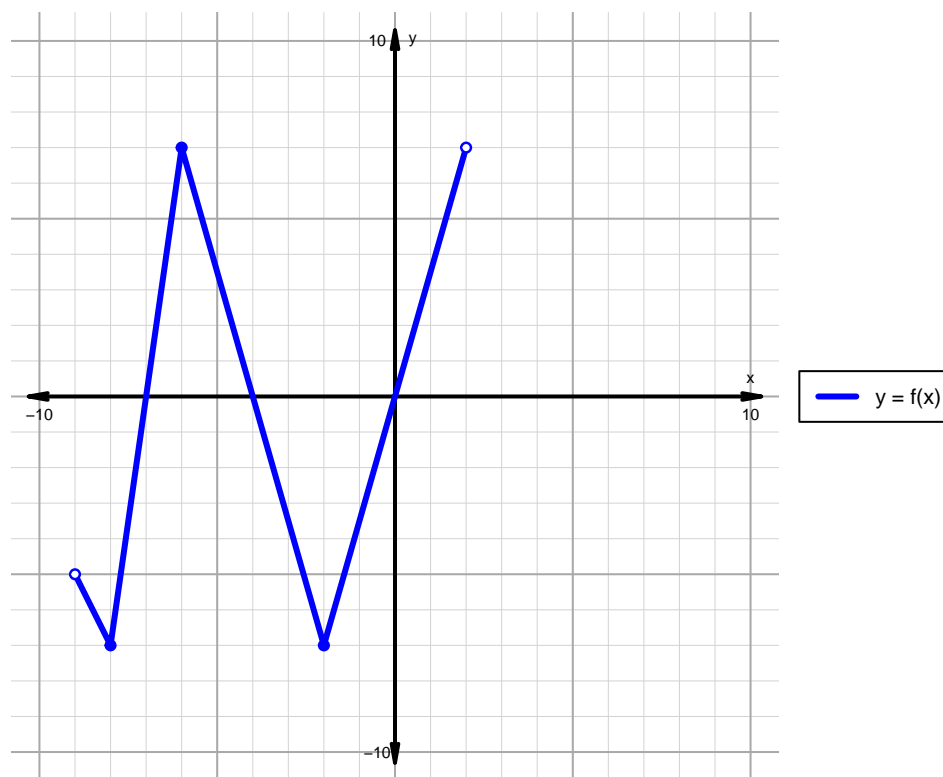


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 93)**

1. The function  $f$  is graphed below.

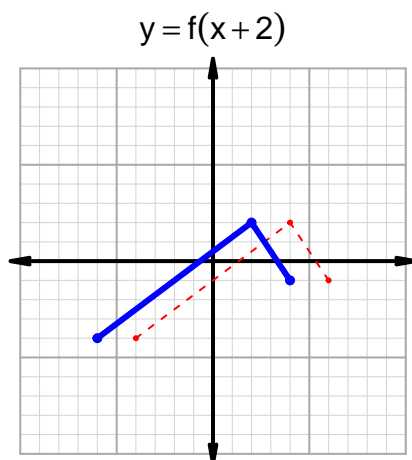
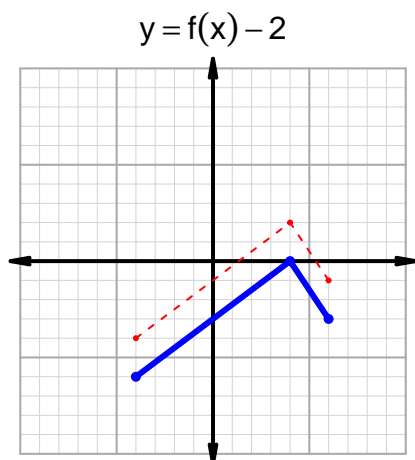
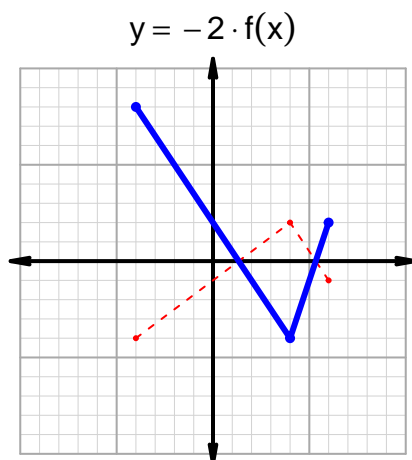
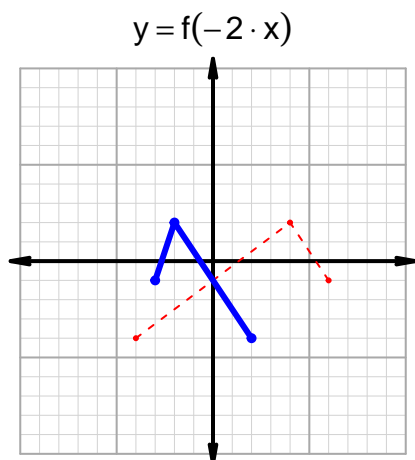


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, -4) \cup (0, 2)$
Negative	$(-9, -7) \cup (-4, 0)$
Increasing	$(-8, -6) \cup (-2, 2)$
Decreasing	$(-9, -8) \cup (-6, -2)$
Domain	$(-9, 2)$
Range	$(-7, 7)$

## Intervals, Transformations, and Slope Solution (version 93)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 14$  and  $x_2 = 38$ . Express your answer as a reduced fraction.

$x$	$g(x)$
14	55
38	64
55	38
64	14

$$\frac{g(38) - g(14)}{38 - 14} = \frac{64 - 55}{38 - 14} = \frac{9}{24}$$

The greatest common factor of 9 and 24 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{3}{8}$$